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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/381,588	09/20/1999	STEVEN JAMES SHATTIL	022950PCTUS	4149

7590 01/29/2004
STEVE SHATTIL
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BOULDER, CO 80303

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 01/29/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/381,588

Applicant(s)

SHATTIL, STEVEN JAMES

Examiner

Kevin M Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41-136 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44-81, 83-86, 92, 102, 103, 107-109, 112-118, 127, 128 and 132-134 is/are allowed.
- 6) ☒ Claim(s) 82, 87, 88, 93-100, 104-106, 110, 111, 119-126, 129-131, 135 and 136 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

1. This office action, in response to the response filed 10/28/2003, is a non-final office action.

Response to Arguments

2. Applicant's arguments, see pages 2-4, filed 10/28/2003, with respect to the rejections of claims 44-136 under 35 USC 102 (e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the prior art disclosed in the following paragraphs.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 82, 87, 97-99 and 104-106 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamalainen et al (US 5,815,801).

Regarding claims 82, 97-99 and 104-106, Hamalainen discloses a receiver having a receiving element for receiving a plurality of carrier signals as shown in figure

1. Information is modulated onto these carriers. Each of these modulated carriers has a specific phase offset, which distinguishes the signals (column 2, lines 56-65). The rake receiver combines the received signals to filter out unwanted signals and noise components to recover the desired signal. This takes place in the rake receiver 21 of figure 2. Information is then recovered from this desired signal.

Regarding claim 87, Hamalainen discloses using weighting coefficients on the received signals (column 4, lines 64-67).

4. Claims 95, 100, 110 and 111 are rejected under 35 U.S.C. 102(e) as being anticipated by Awater et al (US 6,175,551).

Regarding claims 95 and 100, Awater discloses a transmission system and method. Awater receives multiple carriers (column 1, lines 7-14). The signal is converted from a time domain into a frequency domain (figure 4, item 58). The frequency domain signal is filtered (figure 4, item 60) and the filtered signal is converted to the time domain (figure 4, item 62). The original data will be recovered downstream of these elements.

Regarding claims 110 and 111, Awater discloses a transmission system and method. Awater receives multiple carriers (column 1, lines 7-14). The signal is converted from a time domain into a frequency domain (figure 4, item 58). The frequency domain signal is filtered (figure 4, item 60) and the filtered signal is converted to the time domain (figure 4, item 62). The data is then transmitted. The transmitted data is mapped to orthogonal signals (column 1, lines 7-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 88, 93, 94, 96 and 101 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamalainen et al (US 5,815,801) in view of Odenwalder (US 2002/0009096).

Regarding claim 88, Hamalainen discloses a receiver having a receiving element for receiving a plurality of carrier signals as stated in paragraph 3. Hamalainen does not disclose the use of adjusting the gain of the receiver to compensate for fading. Odenwalder discloses adjusting the gain of the receiving system (paragraph 0041). Odenwalder states, in paragraph 0040, it is advantageous to adjust the gain to increase the high transmission capability and to allow the transmission to adapt to changing radio channel conditions. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the adaptive gain adjustments of Odenwalder in the receiver of Hamalainen.

Regarding claims 93, 94, 96 and 101, Hamalainen discloses a receiver having a receiving element for receiving a plurality of carrier signals as shown in figure 1. Information is modulated onto these carriers. Each of these modulated carriers has a specific phase offset, which distinguishes the signals (column 2, lines 56-65). The rake receiver combines the received signals to filter out unwanted signals and noise

components to recover the desired signal. This takes place in the rake receiver 21 of figure 2. Information is then recovered from this desired signal. . Hamalainen does not disclose the use of adjusting the gain of the receiver to compensate for fading.

Odenwalder discloses adjusting the gain of the receiving system (paragraph 0041).

Odenwalder states, in paragraph 0040, it is advantageous to adjust the gain to increase the high transmission capability and to allow the transmission to adapt to changing radio channel conditions. For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the adaptive gain adjustments of Odenwalder in the receiver of Hamalainen. This is the channel compensation operation. The transmission signal will contain information that was transmitted at certain instants in time.

6. Claims 119, 121 and 126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamalainen et al (US 5,815,801) in view of Odenwalder (US 2002/0009096) further in view of Dent et al (US 5,931,893).

Regarding claims 119, 121 and 126, the combination of Hamalainen and Odenwalder discloses a receiver having a receiving element for receiving a plurality of carrier signals as stated in paragraph 5. The combination doesn't disclose using the apparatus and method in a frequency hopping system. Dent discloses a frequency hopping system using a rake receiver (column 10, lines 28-490. the frequency hopping system allows data to hop from frequency to frequency. If fades occur on a frequency, the system will minimize data loss by hopping to a new frequency when appropriate. For

this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the frequency hopping system disclosed in Dent in the combination of Hamalainen and Odenwalder.

7. Claims 120, 125, 135 and 136 are rejected under 35 U.S.C. 102(e) as being anticipated by Awater et al (US 6,175,551) in view of Dent et al (US 5,931,893).

Regarding claims 120, 125, 135 and 136, Awater discloses a transmission system and method as stated in paragraph 4. Atwater does not disclose using the apparatus and method in a frequency hopping system. Dent discloses a frequency hopping system using a rake receiver (column 10, lines 28-490. the frequency hopping system allows data to hop from frequency to frequency. If fades occur on a frequency, the system will minimize data loss by hopping to a new frequency when appropriate. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the frequency hopping system disclosed in Dent in the transmission system of Awater.

8. Claims 122-124 and 129-131 are rejected under 35 U.S.C. 102(b) as being anticipated by Hamalainen et al (US 5,815,801) in view of Dent et al (US 5,931,893).

Regarding claims 122-124 and 129-131, Hamalainen discloses a receiver having a receiving element for receiving a plurality of carrier signals as stated in paragraph 3. Hamalainen does not disclose using the apparatus and method in a frequency hopping system. Dent discloses a frequency hopping system using a rake receiver (column 10,

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lines 28-490. the frequency hopping system allows data to hop from frequency to frequency. If fades occur on a frequency, the system will minimize data loss by hopping to a new frequency when appropriate. For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the frequency hopping system disclosed in Dent in the receiver of Hamalainen.

Allowable Subject Matter

9. Claims 44-81, 83-86, 89, 92, 102, 103, 107-109, 112-118, 127, 128 and 132-134 allowed.

Contact Information

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications intended for entry or for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

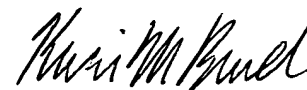
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Burd, whose telephone number is (703) 308-7034. The Examiner can normally be reached on Monday-Thursday from 9:00 AM - 6:00 PM.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.

A handwritten signature in black ink, appearing to read "Kevin M. Burd", is written over a horizontal line.

Kevin M. Burd
PATENT EXAMINER
1/25/2004